ABSTRACT OF THE DISCLOSURE

An automatic surveying system includes a telescopic optical system; an image pickup device for picking up an image of a graduated face of a level rod, to which the telescopic optical system is to be collimated, and converting the image into image data; a memory which stores therein recognition data of at least one of a pattern, numbers, and scale calibrations, provided on the graduated face of the level rod; and an analyzing device for analyzing and recognizing the picked-up image of the at least one of the pattern, numbers, and scale calibrations of the level rod, based on the image data of the level rod picked up by the image pickup device and the recognition data of the pattern, numbers, and scale calibrations, read from the memory, to obtain a measurement.